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REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

RST3-01-F-0047

TRANSMITTAL MEMO

To: Ángel Rodríguez, On-Scene Coordinator
Caribbean Environmental Protection Branch
U.S. EPA, Region II

From: Smita Sumbaly, Data Reviewer
RST 3, Region II

Subject: Puerto Rico Olefins Asbestos Site
Data Validation Assessment

Date: November 10, 2014

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Asbestos PCM and TEM	12 Samples
----------------------	------------
- Matrices and Number of Samples

Air	8 Samples
Lot/Field Blanks	4 Samples
- Sampling Dates: October 2, 13, and 23, 2014

The final data assessment narrative and original analytical data package are attached.

cc: RST 3 SPM: Carlos Huertas
RST 3 SITE FILE TDD #: TO-0001-0005
ANALYTICAL TDD #: TO-0001-0038
PCS#: 1038



U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: November 10, 2014

TO: Ángel Rodríguez, On-Scene Coordinator
U.S. EPA, Region II

FROM: Smita Sumbaly
RST 3 Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness
Sample Collection, Holding Times, and Preservation
Blank Analysis
Sample Sensitivity
Monthly Report PCM and TEM Calibrations

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	<u>I</u> <u>Asbestos</u> <u>PCM</u>	<u>II</u> <u>Asbestos</u> <u>TEM</u>
Acceptable as Submitted	<u>X</u>	<u>X</u>
Acceptable with Comments	<u> </u>	<u> </u>
Unacceptable, Action Pending	<u> </u>	<u> </u>
Unacceptable	<u> </u>	<u> </u>

Data Reviewed by:

19
for

Smita Sumbaly

Date: 11/10/2014

Approved By:

[Signature]

Date: 11/10/14

Area Code/Phone No.:

(732) 585-4410

NARRATIVE

PCS No. 1038

SITE NAME: **Puerto Rico Olefins Asbestos Site**
PR 385 KM 5.4 Int., 127 Tallaboa Ponente,
Ward Penuelas, Puerto Rico

Laboratory Name: Batta Laboratories, 6 Garfield Way, Newark, DE 19713-5817.

INTRODUCTION:

The laboratory's portion of this case consisted of 12 air samples, including three field blanks and one lot blank. Samples were collected on October 2, 13, and 23, 2014. The Batta Laboratory project number is L6888J.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of Asbestos PCM and TEM.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

RFP #: 303/Task#: 1038

Site: Puerto Rico Olefins Asbestos Site

Lab: Batta Laboratories

Matrix/No. of Samples: Air/12

SDG#'s: L6888J

Reviewer: SMITA SUMBALY

Contractor: WESTON-RST 3

A.2.1 Validation Flags-

The following flags have been applied in red by the data validator and must be considered by the data user.

J-

This flag indicates the result qualified as estimated.

Red- Line-

A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data-

The results that do not carry "J" or "red-line" are fully usable.

A.2.2 The data assessment is given below and on the attached sheets.

From October 2 through 23, 2014, U.S. EPA, Region II, RST 3 personnel collected 12 air samples, including three field blanks and one lot blank, from the Puerto Rico Olefins Asbestos Site, located at PR 385 KM 5.4 Int., 127 Tallaboa Ponente, Ward Penuelas, Puerto Rico. Within 24 hours of collections, all samples were shipped via FedEx to Batta Laboratories, 6 Garfield Way, Newark, DE. The laboratory verified that the samples were received intact and properly custody sealed.

All 12 air samples for asbestos were collected on a 25 mm, 0.45µm MCEF cassettes. Samples were prepared and analyzed for asbestos according to Phase Contrast Microscopy (PCM) using NIOSH Method 7400, Revision 3, Issue 2 (8/15/94). The limit of detection for the air method is 5.5 fibers for 100 fields of views, or 7 fibers per square millimeters. All 12 samples were also analyzed for Transmission Electron Microscopy (TEM) by NIOSH Method 7402, Issue 2 (8/15/94). The target sensitivity for the air method is 0.004 fiber/cc.

.Client identification (ID) and laboratory ID numbers are as follows:

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
Project No. L6888J				
FB-100214-001	802404/802412	Air	10/02/2014	Asbestos PCM and TEM
LOTB-100214-001	802405/802413	Air	10/02/2014	Asbestos PCM and TEM
P0001-AS04-0930	802406/802414	Air	10/02/2014	Asbestos PCM and TEM
P0001-AS05-0930	802407/802415	Air	10/02/2014	Asbestos PCM and TEM
P0001-AS06-0930	802408/802416	Air	10/02/2014	Asbestos PCM and TEM
P0001-AS07-1002	802409/802417	Air	10/02/2014	Asbestos PCM and TEM

Title: Evaluation of Asbestos Data
Data Assessment Narrative

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
P0001-AS08-1002	802410/802418	Air	10/02/2014	Asbestos PCM and TEM
P0001-AS09-1002	802411/802419	Air	10/02/2014	Asbestos PCM and TEM
FB-101314-001	803185/803187	Air	10/13/2014	Asbestos PCM and TEM
PAS01-101314	803186/803188	Air	10/13/2014	Asbestos PCM and TEM
FB-102314-001	803546/803548	Air	10/23/2014	Asbestos PCM and TEM
PAS01-102314	803547/803549	Air	10/23/2014	Asbestos PCM and TEM

Asbestos PCM and TEM analyses by NIOSH Methods 7400 and 7402

Twelve air samples, including three field blanks and one lot blank, were analyzed by PCM – NIOSH Method 7400 and TEM-NIOSH Method 7402. All PCM data were reported in fibers/mm² and fibers/cc; and TEM data were reported in fibers/cc. Out of 12 samples, three field blanks, one lot blank, and six other field samples were reported as <7.0 fibers/mm² and other two samples were reported as 9.6 and 10.2 fiber/mm² (0.006 f/cc). Laboratory counted fibers in 100 fields for each sample. For PCM analysis, fibers greater than 5.0 um in length with an aspect ratio of ≥3:1 were reported. For TEM analysis laboratory reported fibers >5 um in length and >0.25 um in width as per NIOSH Method 7402.

All 12 samples were also analyzed for TEM by NIOSH Method 7402. Laboratory opened the minimum 40 grids or 100 fibers were counted. All TEM results were reported below the limit of detection.

For QC purposes, the laboratory performed reanalysis of four samples per batch. All QC results are acceptable. Laboratory also included Calibration Sheet, PCM and TEM Routine Alignment & calibration Form, and Analytical Bench Sheet with the data package.

The results presented for the air samples are acceptable as reported. No qualifications were required.

ASBESTOS – PCM and TEM TABULATED RESULTS

Client Sample ID Number	Laboratory Sample ID Number	PCM – NIOSH 7400						TEM - NIOSH 7402	
		Volume (liters)	Fibers	Fields	LOD (f/cc)	Fibers /mm2	Fibers/cc	TEM Results (f/cc)	Asbestos Type Detected
Sampling Date: October 2, 2014									
FB-100214-001	802404/802412	-	<5.5	100	-	<7.0	*	n/a	n/a
LOTB-100214-001	802405/802413	-	<5.5	100	-	<7.0	*	n/a	n/a
P0001-AS04-0930	802406/802414	621.7	<5.5	100	0.004	<7.0	<0.004	<0.004	None Detected

Title: Evaluation of Asbestos Data
Data Assessment Narrative

Client Sample ID Number	Laboratory Sample ID Number	PCM – NIOSH 7400						TEM - NIOSH 7402	
		Volume (liters)	Fibers	Fields	LOD (f/cc)	Fibers /mm2	Fibers/cc	TEM Results (f/cc)	Asbestos Type Detected
P0001-AS05-0930	802407/ 802415	620.6	<5.5	100	0.004	<7.0	<0.004	<0.004	None Detected
P0001-AS06-0930	802408/ 802416	606.3	7.5	100	0.004	9.6	0.006	<0.004	None Detected
P0001-AS07-1002	802409/ 802417	599.9	<5.5	100	0.004	<7.0	<0.004	<0.004	None Detected
P0001-AS08-1002	802410/ 802418	600	<5.5	100	0.004	<7.0	<0.004	<0.004	None Detected
P0001-AS09-1002	802411/ 802419	664.9	8	100	0.004	10.2	0.006	<0.004	None Detected
FB-101314-001	803185/ 803187	-	<5.5	100	-	<7.0	*	n/a	n/a
PAS01-101314	803186/ 803188	548.8	<5.5	100	0.005	<7.0	<0.005	<0.004	None Detected
FB-102314-001	803546/ 803548	-	<5.5	100	-	<7.0	*	n/a	n/a
PAS01-102314	803547/ 803549	496.1	<5.5	100	0.005	<7.0	<0.005	<0.005	None Detected

* – Field Blank/Lot Blank

Fibers/mm² – Fibers per millimeter square

Fibers/cc – Fibers per cubic centimeter

LOD – Limit of Detection

n/a – not applicable

A.2.3 Contract Problem/Non-Compliance:

None

Contractor Reviewer:


for

Smita Sumbaly

Signature:

11/10/14

Date:

Verified by:



Signature:

11/10/14

Date:

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E.P.A. LAB ID # DE 004



A.I.H.A. / NLLAP
#100448



NVLAP
#101032

CERTIFICATE OF PCM ANALYSIS

Page 1 of 2

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/6/2014

Sampling Data

BLI Project#: L6888J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/2/14

Sampled By: CLIENT

Date Analyzed: 10/4/14

Analytical Parameters

Effective Filter Area (mm²): 385

Graticule Field Area (mm²): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results	
							F/mm ²	F/cc
802404	FB-100214-001	FB	0	100	<5.5	N/A	<7.0	N/A
802405	LOTB-100214-001	LB	0	100	<5.5	N/A	<7.0	N/A
802406	P0001-AS04-0930	FS	621.7	100	<5.5	0.004	<7.0	<0.004
802407	P0001-AS05-0930	FS	620.6	100	<5.5	0.004	<7.0	<0.004
802408	P0001-AS06-0930	FS	606.3	100	7.5	0.004	9.6	0.006
802409	P0001-AS07-1002	FS	599.9	100	<5.5	0.004	<7.0	<0.004

ANALYST: A. YOHN

REVIEWED BY: 

- * Sample results listed above are not blank-corrected.
- * Results pertain only to the items tested.
- * This report does not constitute endorsement by AIHA and/or any other U.S. government agencies.
- * Named analyst may not be sole analyst. Refer to Chain of Custody for additional analysts.
- * Sample volumes are calculated from data supplied by the client. Batta Laboratories, Inc. does not accept liability for results expressed in fibers per cubic centimeter. Furthermore, Batta Laboratories assumes no responsibility for the accuracy of results reflected by the use of improper collection techniques or equipment.
- * Current YTD intralaboratory Sr value is 0.22. This value may change slightly over time.

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CERTIFICATE OF PCM ANALYSIS

Page 2 of 2

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/6/2014

Sampling Data

BLI Project#: L6888J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/2/14

Sampled By: CLIENT

Date Analyzed: 10/4/14

Analytical Parameters

Effective Filter Area (mm²): 385

Graticule Field Area (mm²): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results	
							F/mm ²	F/cc
802410	P0001-AS08-1002	FS	600	100	<5.5	0.004	<7.0	<0.004
802411	P0001-AS09-1002	FS	664.9	100	8	0.004	10.2	0.006

ANALYST: A. YOHN

REVIEWED BY: 

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CERTIFICATE OF PCM ANALYSIS

Page 1 of 1

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 11/5/2014

Sampling Data

BLI Project#: L6886J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/13/14

Sampled By: CLIENT

Date Analyzed: 10/16/14

Analytical Parameters

Effective Filter Area (mm²): 385

Graticule Field Area (mm²): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results	
							F/mm ²	F/cc
803185	FB-101314-001	FB	0	100	<5.5	N/A	<7.0	N/A
803186	PAS01-101314	FS	548.8	100	<5.5	0.005	<7.0	<0.005

ANALYST: JUDY XU

REVIEWED BY: 

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- * Current YTD intralaboratory Sr value is 0.22. This value may change slightly over time.

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#100448



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#101032

CERTIFICATE OF PCM ANALYSIS

Page 1 of 1

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/28/2014

Sampling Data

BLI Project#: L6888J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/23/14

Sampled By: CLIENT

Date Analyzed: 10/27/14

Analytical Parameters

Effective Filter Area (mm²): 385

Graticule Field Area (mm²): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results	
							F/mm ²	F/cc
803546	FB-102314-001	FB	0	100	<5.5	N/A	<7.0	N/A
803547	PAS01-102314	FS	496.1	100	<5.5	0.005	<7.0	<0.005

ANALYST: JUDY XU

REVIEWED BY: 

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- * Current YTD intralaboratory Sr value is 0.22. This value may change slightly over time.

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#101032

SAMPLE SUMMARY REPORT

Revision#:

COC#: MULTIPLE

Page 1 of 2

Batch #: MULTIPLE

Test Method: NIOSH 7402 (Issue 2: 15 August 1994)

Prep Method: NIOSH 7402 (Issue 2: 15 August 1994)

General Information

BLI Project #: L6888J

Project Name: WESTON SOLUTIONS, INC. - RFP# 303

Date Sampled: MULTIPLE

Sampled by: CLIENT

Sampling Location: PR OLEFINS REMOVAL/SITE 0001-0005

Date Received: MULTIPLE

Report Date: MULTIPLE

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 3852nd Filter Area (mm²): N/A

Media: MCE

Grid Area (mm²): 0.0094

Date Prepped: MULTIPLE

Prepped By: JX/ARY

Date Analyzed: MULTIPLE

Analyzed By: JX/ARY

Sample ID and Prep Information				Analytical Data				Results			
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) PCM Fields PCM Fibers	# of Grid Openings Area Analyzed (mm ²) Total # of TEM PCME Fibers	Total # of Asb. by TEM Asb. Fiber Ratio f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm ²)
802412	FB-100214-001	FIELD	1	0	40	0.0	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
		BLANK		100	0.3760	0.000					
		DIRECT		0.5	0.0	N/A					
802413	LOTB-100214-001	LOT	1	0	40	0	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
		BLANK		100	0.3760	0.000					
		DIRECT		0	0.0	N/A					
802414	P0001-AS04-093014	FIELD	1	621.72	40	0	NON-DETECTED	0.00500	0.00165	< 0.00434	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		4.5	0.0	< 0.004					
802415	P0001-AS05-093014	FIELD	1	620.58	40	0	NON-DETECTED	0.00500	0.00165	< 0.00435	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		1	0.0	< 0.004					
802416	P0001-AS06-093014	FIELD	1	606.33	40	0	NON-DETECTED	0.00500	0.00169	< 0.00445	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		7.5	0.0	0.006					
802417	P0001-AS07-100214	FIELD	1	599.88	40	0	NON-DETECTED	0.00500	0.00171	< 0.00450	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		3.5	0.0	< 0.004					
802418	P0001-AS08-100214	FIELD	1	600.04	40	0	NON-DETECTED	0.00500	0.00171	< 0.00450	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		4	0.0	< 0.004					
802419	P0001-AS09-100214	FIELD	1	664.93	40	0	NON-DETECTED	0.00500	0.00154	< 0.00406	< 7.00637
		SAMPLE		100	0.3760	0.000					
		DIRECT		8	0.0	0.006					
803187	FB-101314-001	FIELD	1	0	40	0	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
		BLANK		100	0.3760	0.000					
		DIRECT		0	0.0	N/A					
803188	PAS01-101314	FIELD	1	548.8	40	0	NON-DETECTED	0.00500	0.00187	< 0.00492	< 7.00637
		SAMPLE		100	0.3760	0.077					
		DIRECT		2	6.5	< 0.005					

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): J. XU

Reviewed By: 

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not include all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summary report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

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✓ **NIH/NIH-ITC**
ACCORDING TO REPORT
NIH/NIH-ITC REPORT
10-10-10
10-10-10

NVLAP
#101032

NVLAP

Page 2 of 2

Prep Method: NIOSH 7402 (Issue 2: 15 August 1994)

Instruments:	Scope Model:	JEM 100CX	Magnification:	49,000	Operational Condition:	Normal
	Analyzer:	Kevex	Det. Area:	40 mm	Det. Window:	30.008 mm

Report Date: MULTIPLE

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Analyzed By: JX/ARY

Sample ID and Prep information				Analytical Data					Results			
Lab Sample Number	Field Sample Number	Sample QA Type- Prep Type	Dilution Factor	Air Volume (L)	# of Grid Openings	Total # of Asb. by TEM	Asbestos Mineral Type Detected	Target	Reported	Reported Air	Reported	
				PCM Fields	Area Analyzed (mm ²)	Asb. Fiber Ratio		Sensitivity	Sensitivity	Concentration	Filter Density	
				PCM Fibers	Total # of TEM PCME Fibers	f/cc by PCM		(f/cc)	(f/cc)	(f/cc)	(f/mm ²)	
803548	FB-102314-001	FIELD BLANK DIRECT	1	0	40	0.0	NON-DETECTED	0.00500	N/A	N/A	< 7.00637	
				100	0.3760	0.000						
				2	0.0	N/A						
803549	PAS01-102314	FIELD SAMPLE DIRECT	1	496.09	40	0	NON-DETECTED	0.00500	0.00206	< 0.00544	< 7.00637	
				100	0.3760	1.000						
				4	0.5	< 0.005						

Analyst(s): J. XU

Reviewed By:

- 11/05/2014

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E.P.A. LAB ID# DE004



A.I.H.A./NLLAP
#100448



NVLAP
#101032

CERTIFICATE OF TEM ANALYSIS

Page 1 of 1

NIOSH 7402, Asbestos by TEM

Report Date: 10/6/2014

Sampling Data

BLI Project #: L6888J

Project Name: Weston Solutions

Date Sampled: 9/30 & 10/2/2014

Sampling Location: SITE 0001-0005

Sampled By: CLIENT

Date Received: 10/3/14

Analytical Data

Effective Filter Area (mm²): 385

Media: MCE

Pore Size (μm): 0.45

Grid Area (mm²): 0.0094

Date Prepped: 10/4/14

Prepped By: JX/AY

Date Analyzed: 10/4/2014

Analyzed By: AY

Client-Supplied Data				Analytical Data				Results		
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm ²)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
802412	FB-100214-001	FIELD BLANK	N/A	0	N/A	0.64	N/A	N/A	N/A	None Detected
802413	LOTB-100214-001	LOT BLANK	N/A	0	N/A	0.00	N/A	N/A	N/A	None Detected
802414	P0001-AS04-093014	FIELD SAMPLE	N/A	621.72	0.004	5.73	0.000	0.004	< 0.004	None Detected
802415	P0001-AS05-093014	FIELD SAMPLE	N/A	620.58	0.001	1.27	0.000	0.004	< 0.004	None Detected
802416	P0001-AS06-093014	FIELD SAMPLE	N/A	606.33	0.006	9.55	0.000	0.004	< 0.004	None Detected
802417	P0001-AS07-100214	FIELD SAMPLE	N/A	599.88	0.003	4.46	0.000	0.004	< 0.004	None Detected
802418	P0001-AS08-100214	FIELD SAMPLE	N/A	600.04	0.003	5.10	0.000	0.004	< 0.004	None Detected
802419	P0001-AS09-100214	FIELD SAMPLE	N/A	664.93	0.006	10.19	0.000	0.004	< 0.004	None Detected

* Reported result is expressed as f/cc Asbestos in the Visible Range.

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

AY

PCM Analyst

AY

TEM Analyst

Reviewed By: 

Results pertain only to the items tested. Lab is not responsible for results expressed in f/cc, which are calculated from volumes supplied by the client. This report may not be duplicated in part without written permission from BATTA Laboratories.

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#101032

CERTIFICATE OF TEM ANALYSIS

Page 1 of 1

NIOSH 7402, Asbestos by TEM

Report Date: 10/17/2014

Sampling Data

BLI Project #: L6888J

Project Name: WESTON SOLUTIONS - PR OLEFINS REMOVAL

Date Sampled: 10/13/2014

Sampling Location: SITE# 0001-0005

Sampled By: CLIENT

Date Received: 10/15/14

Analytical Data

Effective Filter Area (mm²): 385

Media: MCE

Pore Size (µm): 0.80

Grid Area (mm²): 0.0090

Date Prepped: 10/16/14

Prepped By: JX

Date Analyzed: 10/16/2014

Analyzed By: JX

Client-Supplied Data				Analytical Data				Results		
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm ²)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
803187	FB-101314-001	AIR	NA	0	N/A	0.00	N/A	N/A	N/A	None Detected
803188	PAS01-101314	AIR	NA	548.8	0.002	2.55	0.013	0.005	< 0.005	None Detected

* Reported result is expressed as f/cc Asbestos in the Visible Range.

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

JX

PCM Analyst

J. XU

TEM Analyst

Reviewed By: 

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#100448



CERTIFICATE OF TEM ANALYSIS

Page 1 of 1

NIOSH 7402, Asbestos by TEM

Report Date: 10/28/2014

Sampling Data

BLI Project #: L6888J

Project Name: WESTON SOLUTION-RR OLEFINS REMOVAL

Sampling Location: RR OLEFINS REMOVAL

Date Sampled: 10/23/2014

Sampled By: CLIENT

Date Received: 10/24/14

Analytical Data

Effective Filter Area (mm²): 385

Media: MCE

Pore Size (µm): 0.80

Grid Area (mm²): 0.0090

Date Prepped: 10/27/14

Prepped By: JX

Date Analyzed: 10/27/2014

Analyzed By: JX

Client-Supplied Data				Analytical Data				Results		
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm ²)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
803548	FB-102314-001	TEM	NA	0	N/A	2.55	N/A	N/A	N/A	None Detected
803549	PAS01-102314	TEM	NA	496.09	0.004	5.10	0.001	0.005	< 0.005	None Detected

* Reported result is expressed as f/cc Asbestos in the Visible Range.

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

JX

PCM Analyst

J. XU

TEM Analyst

Reviewed By: 

Results pertain only to the items tested. Lab is not responsible for results expressed in f/cc, which are calculated from volumes supplied by the client. This report may not be duplicated in part without written permission from BATT Laboratories.

FIELD COC

CHAIN OF CUSTODY RECORD

No: 2-100214-00010005-0001

Cooler #: 001

Site #: 0001-0005

Contact Name: Smita Sumbaly

Lab: Batta environmental Associates, Inc.

Lab Phone: 302-737-3376

Contact Phone: 732-585-4410

USEPA

DateShipped: 10/2/2014

CarrierName: FedEx

AirbillNo: 8000 9357 9235

[illegible]

Special Instructions: Total Sampling time units in minutes.

Turnaround time 72 hrs.

Provide TWA calculations.

REF ID: A66303

SAMPLES TRANSFERRED FROM

Team WC.

CHAIN OF CUSTODY #

[illegible]

TSM ~~PLA~~ COL

11/05/2014

USEPA

Date Shipped: 10/23/2014

CarrierName: FedEx

Airbill No: 800093579279

CHAIN OF CUSTODY RECORD

PR Olefins Removal

Contact Name: Smita Sumbaly

Contact Phone: 732-585-4410

No: 2-102314-00010005-0001

Cooler #: 001

Lab: Batta environmental Associates, Inc.

Lab Phone: 302-737-3376

[illegible]

Special Instructions: Total Sampling time units in minutes.

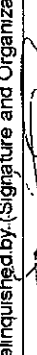
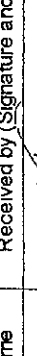
Turnaround time 72 hrs.

Provide TWA calculations.

RFP#: 303

TLN vol.

<p>Special Instructions: Total Sampling time units in minutes. Turnaround time 72 hrs. Provide TWA calculations. RFP#: 303</p>	<p><i>72 M WOC.</i></p>
<p>SAMPLES TRANSFERRED FROM</p>	
<p>CHAIN OF CUSTODY #</p>	

Items/Reason	Relinquished by: (Signature and Organization)	Date/Time	Received by: (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Ally Trans		10-23-01		11/12/01 1030	Good